

IN THE CLAIMS

1. (Cancelled)

2. (Cancelled)

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32. (Cancelled)
33. (Cancelled)
34. (Cancelled)
35. (Cancelled)
36. (Cancelled)
37. (Cancelled)
38. (Currently amended) A method for updating microcode of a printer comprising the steps of:
- embedding at least one microcode update-file as a module in a print job file, said module being one of a plurality of modules in said print job file;
- inputting said print job file to said printer, over at least one printer job interface, in a unidirectional fashion, without using any specialized downloading hardware or application routine;
- recognizing that said print job file includes said microcode update-file; and
- writing said microcode update-file to a memory area in said printer indicated in said print job file.
39. (Currently amended) The method of claim 38, wherein said step of recognizing includes interrogating a file header of said print job file wherein a presence of said microcode update-file in said print job file is indicated by a bit pattern in a header portion of said print job file, not in any job data.
40. (Cancelled)

41. (Previously presented) The method of claim 38, wherein said step of inputting further comprises downloading said module to volatile memory.
42. (Previously presented) The method of claim 38, wherein said step of writing to a memory area further comprises writing to a non-volatile memory area.
43. (Currently amended) The method of claim 38, wherein said microcode update file includes an executable program, said executable program being machine language code executable by a processor in said printer.
44. (Currently amended) The method of claim 43, further comprising, after said step of writing, the step of transferring execution to said executable program, without resetting or restarting any processor in said printer.
45. (Currently amended) The method of claim 44, wherein after said step of transferring, said executable program returns execution to a previously running program that was in existence before said print job file arrived at said printer.
46. (Currently amended) The method of claim 44, wherein said step of transferring comprises loading said executable program, upon receipt of said executable program, said executable program being a portion of said print job file as a next task to be performed while another task is in process.
47. (Previously presented) The method of claim 44, wherein said step of transferring comprises first loading said executable program in to execution memory.
48. (Currently amended) The method of claim 44, ~~wherein said print job file comprises a plurality of modules,~~ wherein after said step of transferring, said executable program acts as controlling microcode to downloads other modules of said plurality of modules of

said print job file to said printer, said executable program having been downloaded from said print job file.

49. (Previously presented) The method of claim 48, wherein said step of downloading comprises passing pointers to said other modules to said executable program.

50. (Currently amended) The method of claim 38, wherein said module further comprises a module header and module data.

51. (Previously presented) The printer job file of claim 50, wherein said module header comprises a bit pattern that directs a processor in said printer to uncompress said module.

52. (Previously presented) The method of claim 50, wherein said module header comprises a data field for specifying a destination storage location for said module.

53. (Previously presented) The method of claim 52, wherein said module header comprises a bit pattern that directs a processor in said printer to create a file specified by said data field.

54. (Previously presented) The method of claim 52, wherein said module header comprises a bit pattern that directs a processor in said printer to delete a file specified by said data field.

55. (Previously presented) The method of claim 52, wherein said module header comprises a bit pattern that directs a processor in said printer to create a directory specified by said data field.

56. (Previously presented) The method of claim 52, wherein said module header comprises a bit pattern that directs a processor in said printer to delete a directory specified by said data field.

57. (Currently amended) An apparatus for updating microcode comprising;
a computing device having a program for composing and downloading a print job file, said print job file comprising a microcode update-file; and
a printer comprising a processor, a memory for storing microcode and other information, a printing engine, and an interface for sending and receiving information;
wherein said processor, said memory, said printing engine, and said interface are coupled together by a bus, and said processor directs the activities of said printing engine and said interface under control of said microcode;
and further wherein said computing device and said printer are coupled through said interface and said computing device downloads said print job file to said printer over a printer job interface, in a unidirectional fashion, without using any specialized downloading hardware or application routine, said processor recognizes that said print job file includes said microcode update-file and writes said microcode update-file to a memory area in said printer indicated in said print job file.
58. (Currently amended) The apparatus of claim 57, wherein said print job file further comprises a print job file header, wherein a presence of a microcode update-file in said print job file is indicated by a bit pattern in a header portion of said print job file, not in any job data.
59. (Currently amended) The apparatus of claim 57, wherein said print job file further comprises a module comprising a module header and module body, wherein said module body comprises said microcode update-file.
60. (Currently amended) The apparatus of claim ~~58~~57, wherein said print job file header further comprises a bit pattern that represents an indication of a destination printer.
61. (Currently amended) The apparatus of claim ~~58~~57, wherein said print job file header further comprises a bit pattern that indicates that said microcode update-file

includes a module, said module including microcode that is to be immediately executed by said processor is to be executed by said processor.

62. (Cancelled)

63. (Currently amended) The ~~apparatus~~print job file of claim 61 wherein said print job file comprises a plurality of modules and said print job file header further comprises a bit pattern that indicates that if said print job file includes microcode that is immediately executable by said processor and that microcode executes during a receipt of said print job file, said microcode receives and downloads a rest of ~~during execution, said microcode update file downloads another~~ of said plurality of modules to said printer.

64. (Currently amended) The ~~apparatus~~print job file of claim 59 wherein said module header comprises a bit pattern that directs a processor in said printer to uncompress said module.

65. (Currently amended) The ~~apparatus~~print job file of claim 59 wherein said module header comprises a data field for specifying a destination storage location for said module.

66. (Currently amended) The ~~apparatus~~print job file of claim 65 wherein said module header comprises a bit pattern that directs a processor in said printer to create a file specified by said data field.

67. (Currently amended) The ~~apparatus~~print job file of claim 65 wherein said module header comprises a bit pattern that directs a processor in said printer to delete a file specified by said data field.

68. (Currently amended) The ~~apparatus~~print job file of claim 65 wherein said module header comprises a bit pattern that directs a processor in said printer to create a directory specified by said data field.

69. (Currently amended) The ~~apparatus~~print job file of claim 65 wherein said module header comprises a bit pattern that directs a processor in said printer to delete a directory specified by said data field.

70. (Currently amended) A computer readable medium carrying one or more sequences of instructions for updating ~~the~~ microcode of a printer, wherein execution of the one or more sequences of instructions by one or more processors causes the one or more processors to perform the steps of:

embedding a microcode update ~~file~~ as a module in a print job file;

inputting said print job file to said printer, in a unidirectional fashion, without using any specialized downloading hardware or application routine;

recognizing that said print job file includes said microcode update ~~file~~; and

writing said microcode update ~~file~~ to a memory area in said printer indicated in said print job file.

71. (Currently amended) The computer readable medium of claim 70, wherein said microcode update ~~file~~ includes an executable program that is immediately executable by a processor in said printer, before receiving a rest of said print job file.

72. (Cancelled)

73. (Currently amended) The computer readable medium of claim ~~71~~72, further comprising executing said executable program, wherein said executable program returns execution to a previously running program that was in existence before said print job file arrived at said printer, wherein after said step of transferring, said executable program returns execution to a previously running program.

74. (Currently amended) The computer readable medium of claim ~~71~~72, wherein said print job file comprises a plurality of modules; and a print job header, said print job header including a bit pattern indicating whether said print job file includes immediately

executable processor microcode; and further comprising executing said executable processor microcode to receive and download a rest of ~~and further wherein after said step of transferring, said executable program downloads other modules of said plurality of~~ modules to said printer.

75. (New) The method of claim 50, wherein said module data is compressible.